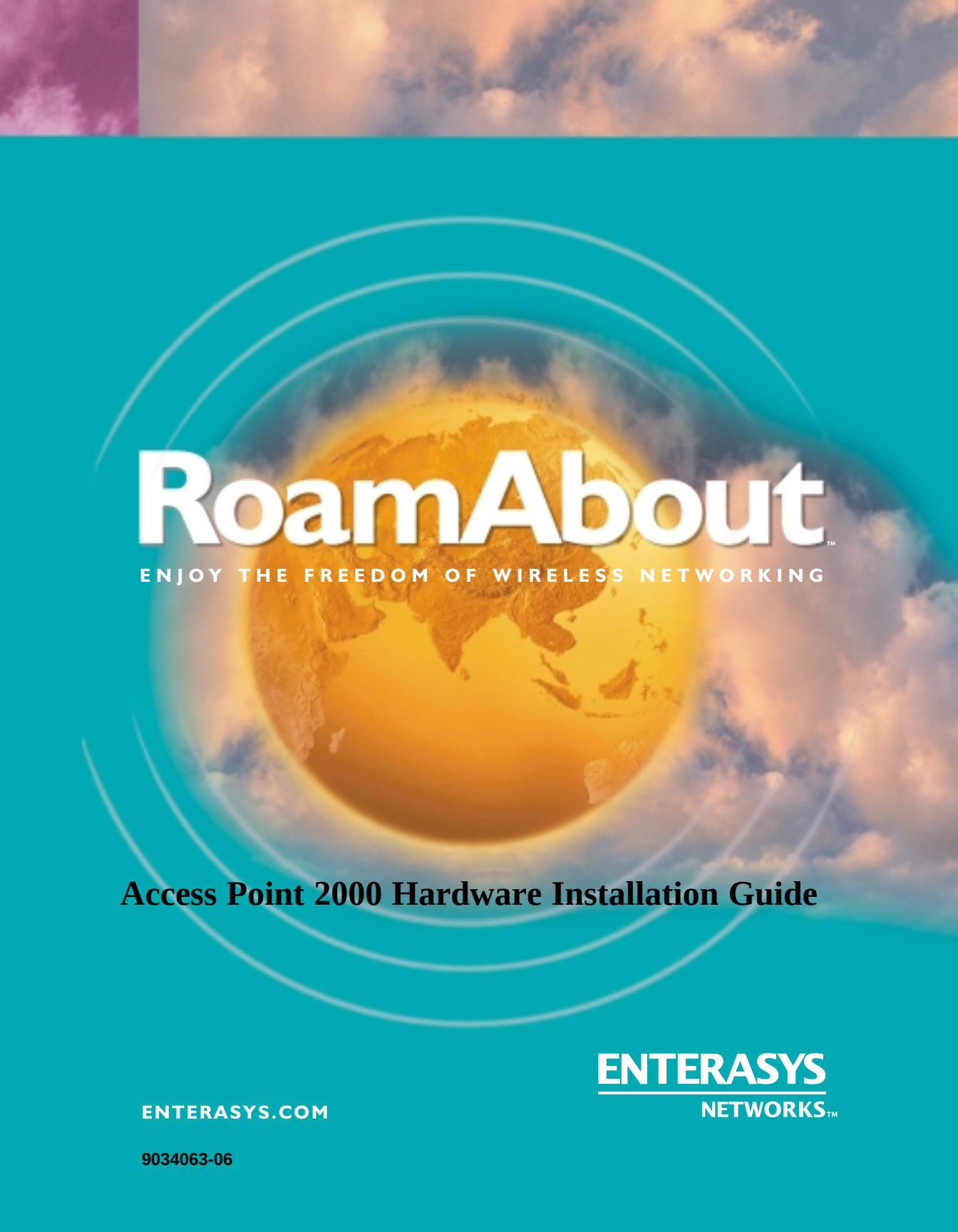

Access Point 2000 Hardware Installation Guide

ENTERASYS NETWORKS

ENTERASYS.COM

9034063-06

ELECTRICAL HAZARD: *Only qualified personnel should perform installation procedures.*

NOTICE

Enterasys Networks reserves the right to make changes in specifications and other information contained in this document and its web site without prior notice. The reader should in all cases consult Enterasys Networks to determine whether any such changes have been made.

The hardware, firmware, or software described in this document is subject to change without notice.

IN NO EVENT SHALL ENTERASYS NETWORKS BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING BUT NOT LIMITED TO LOST PROFITS) ARISING OUT OF OR RELATED TO THIS DOCUMENT, WEB SITE, OR THE INFORMATION CONTAINED IN THEM, EVEN IF ENTERASYS NETWORKS HAS BEEN ADVISED OF, KNEW OF, OR SHOULD HAVE KNOWN OF, THE POSSIBILITY OF SUCH DAMAGES.

Enterasys Networks, Inc.
50 Minuteman Road
Andover, MA 01810

Part Number: 9034063-06 June 2003

FCC Notice

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: *Changes or modifications made to this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.*

Industry Canada (Canada) - Class B Computing Device:

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Europe - EC Declaration of Conformity

This device complies with Low Voltage Directive 73/23/EEC and EMC Directive 89/336/EEC.

VCCI Notice

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

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10. ENFORCEMENT. You acknowledge and agree that any breach of Sections 2, 4, or 9 of this Agreement by You may cause Enterasys irreparable damage for which recovery of money damages would be inadequate, and that Enterasys may be entitled to seek timely injunctive relief to protect Enterasys' rights under this Agreement in addition to any and all remedies available at law.

11. ASSIGNMENT. You may not assign, transfer or sublicense this Agreement or any of Your rights or obligations under this Agreement, except that You may assign this Agreement to any person or entity which acquires substantially all of Your stock or assets. Enterasys may assign this Agreement in its sole discretion. This Agreement shall be binding upon and inure to the benefit of the parties, their legal representatives, permitted transferees, successors and assigns as permitted by this Agreement. Any attempted assignment, transfer or sublicense in violation of the terms of this Agreement shall be void and a breach of this Agreement.

12. WAIVER. A waiver by Enterasys of a breach of any of the terms and conditions of this Agreement must be in writing and will not be construed as a waiver of any subsequent breach of such term or condition. Enterasys' failure to enforce a term upon Your breach of such term shall not be construed as a waiver of Your breach or prevent enforcement on any other occasion.

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DECLARATION OF CONFORMITY

Application of Council Directive(s):	**89/336/EEC** **73/23/EEC**
Manufacturer's Name:	**Enterasys Networks, Inc.**
Manufacturer's Address:	**50 Minuteman Road** **Andover, MA 01810** **USA**
European Representative Address:	**Enterasys Networks Ltd.** **Nexus House, Newbury Business Park** **London Road, Newbury** **Berkshire RG14 2PZ, England**
Conformance to Directive(s)/Product Standards:	**EC Directive 89/336/EEC** **EC Directive 73/23/EEC** **EN 55022** **EN 55024** **EN 60950** **EN 60825**
Equipment Type/Environment:	**Networking Equipment, for use in a Commercial** **or Light Industrial Environment.**

Enterasys Networks, Inc. declares that the equipment packaged with this notice conforms to the above directives.

Contents

Preface

1 Preparing for Installation

2 Cabling and Wiring

3 Installing the Access Point

A Upgrade and Reset

Preface

Purpose of the Manual

This manual describes how to install and set up the RoamAbout Access Point 2000. It also includes problem solving, and connector pin assignment information.

Intended Audience

This manual is intended for use by personnel who will install and set up the RoamAbout Access Point 2000.

ELECTRICAL HAZARD: *Only qualified personnel should perform installation procedures.*

Organization of this Document

This document is organized as follows:

Section	Description
Chapter 1	Contains pre-installation information you should know before you install the RoamAbout Access Point 2000. This includes the site requirements and specifications.
Chapter 2	Presents detailed step-by-step procedures to select, configure, and install the correct power, cabling, and wiring for your Access Point 2000.
Chapter 3	Contains detailed step-by-step procedures to install the Access Point 2000 and connect a device to the console port.
Appendix A	Describes how to upgrade the Access Point 2000 firmware. It also describes how to reset the Access Point to factory default settings.

Document Conventions

The following icons are used in this document:

Icon	Meaning
	**ELECTRICAL HAZARD:** Warns against an action that could result in personal injury or death.
	**CAUTION:** Contains information essential to avoid damage to the equipment.
	**NOTE:** Calls the reader's attention to any item of information that may be of special importance.

Associated Documents

The following table lists the RoamAbout products and information location. The documentation, drivers, and utilities can also be downloaded from the RoamAbout Wireless web site. Check the RoamAbout Wireless web site regularly for product upgrades.

www.enterasys.com/wireless

Component	Information Location
All RoamAbout components	*RoamAbout 802.11 Wireless Networking Guide*
RoamAbout AP Manager	AP Manager online help
RoamAbout 802.11b PC Card and drivers	*RoamAbout 802.11b PC Card Drivers and Utilities CD-ROM Kit* *RoamAbout 802.11b PC Card Installation and Specifications Guide* Various readme files for each operating system
RoamAbout Client Utility	*RoamAbout 802.11b PC Card Drivers and Utilities CD-ROM Kit* Client Utility online help Client Utility readme file
RoamAbout Outdoor Solution (Yagi and Omni antennas)	*RoamAbout Outdoor Antenna Site Preparation and Installation Guide*
RoamAbout ISA Adapter Card	*RoamAbout ISA Adapter Installation*
RoamAbout PCI Carrier Card	*RoamAbout PCI Carrier Card CD-ROM Kit*

Getting Help

For additional support related to this device or document, contact Enterasys Networks using one of the following methods:

World Wide Web:	www.enterasys.com/support
Phone:	(603) 332-9400 1-800-872-8440 (toll-free in the U.S. and Canada) For the Enterasys Networks Support toll-free number in your country: www.enterasys.com/support/gtac-all.html
Internet mail:	**support@enterasys.com**

To send comments or suggestions concerning this document to the Technical Writing Department: **TechWriting@enterasys.com**

Make sure to include the document Part Number in the email message.

Before contacting Enterasys Networks for technical support, have the following information ready:

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (layout, cable type)
- Network load and frame size at the time of trouble (if known)
- The device history (for example, have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

Chapter 1

Preparing for Installation

This chapter describes basic considerations for successfully installing the RoamAbout Access Point 2000 hardware. Before installing the Access Point (AP), you must complete the following tasks:

- Review the site requirements.
- Select the location to install the AP.
- Unpack the AP and check the contents of the shipment.

If installing the Access Point in a building-to-building configuration, refer to the *RoamAbout Outdoor Antenna Site Preparation and Installation Guide* for the proper antenna cabling and grounding procedures.

After you install the Access Point, refer to the *RoamAbout 802.11 Wireless Networking Guide* to configure the Access Point parameters.

Reviewing the Site Requirements

Please review the site requirements before you install the Access Point.

Hardware Requirements

Table 1-1: AP Physical Specifications (with plastic cover)

Parameter	Access Point
Width	17.9 cm (7.06 in)
Height	16.8 cm (6.64 in)
Depth	4.1 cm (1.63 in)
Weight	.86 kg (1.9 lb)

Environmental Requirements

Ensure that the environmental requirements are within the ranges described in **Table 1-2**.

Table 1-2: Environmental Specifications

Parameter	Description
Operating Environment	
Temperature[1]	5°C to 50°C (41°F to 122°F)
Relative humidity	15% to 90% (non-condensing)
Altitude above sea level	2.4 km (8000 ft.)
Air flow	Convection cooled
Nonoperating Environment	
Temperature	-40°C to 66°C (-40°F to 151°F)
Relative humidity	15 to 90% (non-condensing)
Altitude	Up to 4.9 km (16,000 ft)

[1]For sites above 4900 m (16,000 ft.), decrease the operating temperature specification by 1.8°C for each 1000 m or 3.2°F for each 3200 ft.

Electrical Requirements

The Access Point 2000 power and connector specifications are listed in **Table 1-3**. These specifications are provided for customers who want to provide their own site operating power for the Access Point 2000.

If the remote power feature is used, you must test the Ethernet cable from the remote power injector to the Access Point 2000 for continuity and correct pinout before power is applied. Enterasys assumes no responsibility if the specifications set forth as follows are not followed.

CAUTION: *You must use a UL Listed Class 2 power supply. Power supply outputs and current ratings should not exceed the stated maximum voltages and should not fall below the minimum voltages as specified in this document.*

Table 1-3: Power Supply Specifications (World)

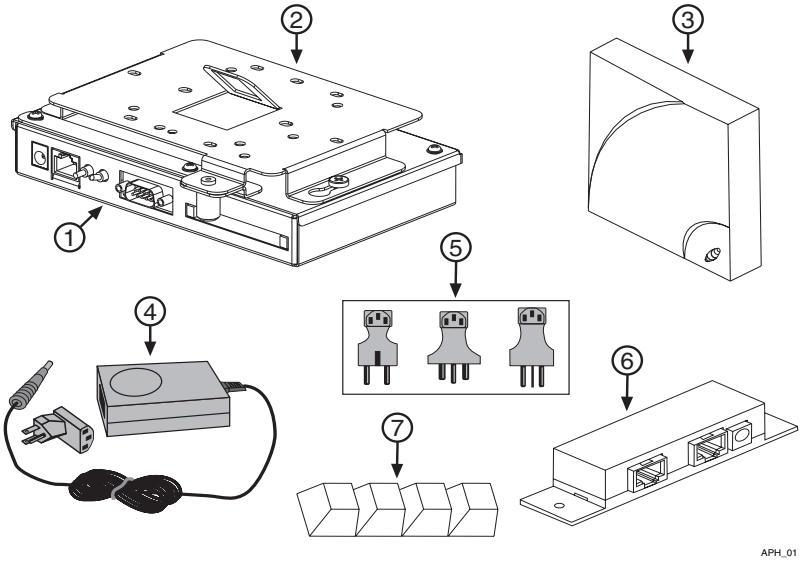
Parameter	Value
Output voltage	42 to 59 VDC
Output current	457 mA to 325 mA
Redundant Power Application	• Redundant power may be applied to the Access Point 2000. • Both power connections (front panel and Ethernet) are electrically isolated. • Redundant power sources do not need to be matched for voltage or polarity.
Power Connector	Coaxial Type Power Plug that mates with Switchcraft RAPC712 Jack (Switchcraft 760 or equivalent). Dimensions: • Inside Diameter: 2.5 mm (0.100 in.) • Outside Diameter: 5.5 mm (0.218 in.) • Barrel Length: 9.5 mm (0.375 in.)
Power Consumption 100 to 240 VAC	16 Watts (19.2 Watts maximum)

Unpacking and Inspecting

Physically inspect all cartons for shipping damage. Report any damage to your shipping carrier. Also verify that you have received the correct basic components and options as listed on the following pages. Report any discrepancies to your Enterasys Sales Representative.

Basic Components

The basic components required for installation include an Access Point and a PC Card.



Access Point

Verify that the following components shipped with your Access Point:

#	Description	Part Number
1, 2	RoamAbout Access Point 2000 (with wall/ceiling mounting bracket)	CSIWS-A
3	Plastic Cover **NOTE**: A security box, sold separately, is available. Contact your Enterasys Representative for more information.	8520216-01
4	Power Supply (100-240 VAC)	5652054-XX
5	International connector kit for the Power Supply (100-240 VAC) (not necessary for North American installations) (	5601013-Kit
6	Remote Power Injector	8917544-05
7	Four Rubber Feet	5020005

* Only use UL Listed Class 2 power supplies with this product.

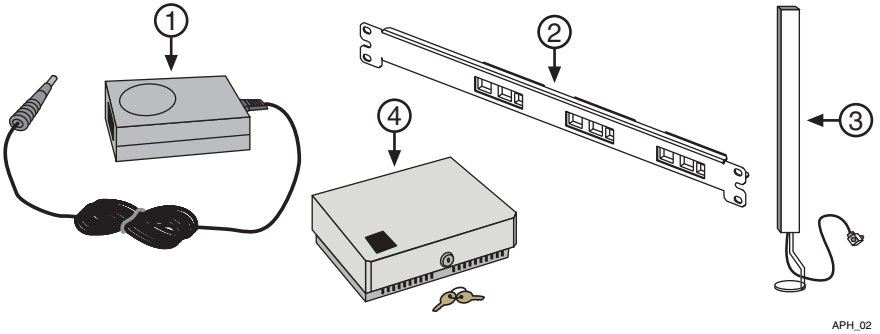
PC Card

The Access Point 2000 supports the RoamAbout 802.11b PC Cards, and their variants. To determine which PC Card is needed for your configuration, refer to the *RoamAbout 802.11 Certification and Regulatory Information* document for 802.11b PC Cards. This document is available on the Enterasys Networks web site at: www.enterasys.com/wireless

The RoamAbout PC Cards are sold separately. Contact your Enterasys sales representative for more information.

Options

The following options are available for the Access Point:



#	Description	Part Number
1	Redundant (or replacement) Power Supply (with four International Power Adapters)	RBTR2-PS3
2	Rack Mount Kit	CSIWS-RM
3	Range Extender Antenna	CSIBB-IA
4	Security Box	CSIWS-WM

Other Considerations

Enterasys Networks recommends that you test the coverage area before you permanently install the Access Point. The coverage area is where wireless clients can be physically located and still connect to the AP. Coverage area is determined by a number of factors, including the speed of the RoamAbout PC Card, physical obstructions, and noise levels.

If possible, temporarily connect the AP and use the RoamAbout utilities described in the *RoamAbout 802.11 Wireless Networking Guide* to determine the actual coverage area. Using these tools can help you determine the best place to mount the Access Point.

If you are using an outdoor antenna with the AP, consider the following factors:

- Type of antenna.
- Outdoor antenna installation.
- Grounding system. The AP and the outdoor antenna must use the same grounding system. Refer to the *RoamAbout Outdoor Antenna Site Preparation and Installation Guide* for Regulatory information, FCC requirements, and detailed procedures to install outdoor antennas.

Chapter 2

Cabling and Wiring

This chapter presents detailed step-by-step procedures to select, configure, and install the correct power, cabling, and wiring for your RoamAbout Access Point 2000.

CAUTION: *The Enterasys 5652054-xx International DC Power Supply (ships with the RoamAbout Access Point 2000) and the RBTR2-PS3 Redundant DC Power Supply have overload protection. If an overload occurs because of miswiring or some other fault, the power supply voltage folds back to help protect the power supply, the site wiring, and the AP from damage.*

Selecting a Power Configuration

The power configurations available for the Access Point include local power, remote power, and redundant power.

Local Power Configuration

In the local power configuration, the AP receives operating power directly from *one local source* (such as a power module connected to a nearby wall outlet). The output plug of the power module is connected directly into the AP chassis-mounted power connector.

Remote Power Configuration

In the remote power configuration, the AP receives operating power over the Ethernet cable from *one remote source* (such as a power module installed in the wiring closet or other remote location). This option requires installing the remote power injector in the same location as the power module. The output of the power module is connected to the remote power injector. The Ethernet interface cable also plugs into the remote power injector. Another Ethernet cable is connected between the injector and the AP to provide input/output signals and power.

CAUTION: *Label the remote power injector cable at the opposite end from the power injector (AP or wall jack) to ensure that this cable is not connected to another device. The procedures in* **Chapter 3** *offer sample text.*

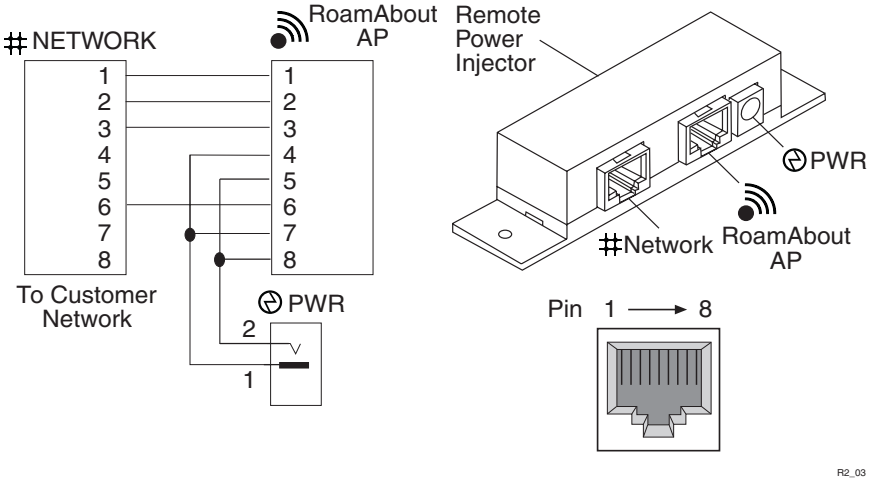
Enterasys offers an optional rack mount kit that allows installation of up to three remote power injectors into one standard rack-mount panel.

Redundant Power Configuration

The AP can be connected to an independent source of local power *and* to an independent source of remote power. If one of these power sources goes down, the AP continues uninterrupted operation with power received from the other (redundant) power source.

Remote Power Injector Installation

The remote power injector provides operating power to the AP using the Ethernet cable. The injector receives input power (via the PWR jack) from either the power module supplied with the AP or directly from the site facility. If using the power module, install the injector within six feet of an AC power outlet. The network interface cable plugs into the NETWORK jack, and the Access Point cable plugs into the ROAMABOUT AP jack.

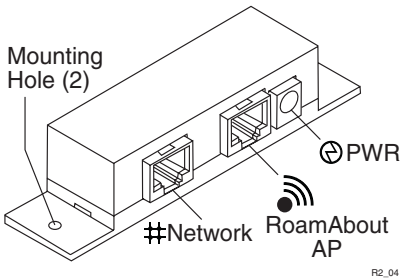


Pin	Network Connector	Access Point Connector	Power Connector
1	XMIT Data Positive	XMIT Data Positive	
2	XMIT Data Negative	XMIT Data Negative	
3	RCV Data Positive	RCV Data Positive	
4	No Connection	Remote Power 1	
5	No Connection	Remote Power 2	
6	RCV Data Negative	RCV Data Negative	
7	No Connection	Remote Power 1	
8	No Connection	Remote Power 2	
1			Remote Power 1
2			Remote Power 2

Use the following procedure to install the remote power injector.

1. If available, use a cable tester to check the cable wiring to the AP. Check continuity and pairing.
2. Select a mounting location:
   - — Close to the Ethernet wiring panel or Ethernet port.
   - — Within six feet of an AC power outlet (if remote power is used).
3. Secure the remote power injector.

   If necessary, use the two wall anchors provided in your installation kit.
4. Insert the Ethernet cable into the NETWORK jack.
5. Insert the AP cable into the ROAMABOUT AP jack.

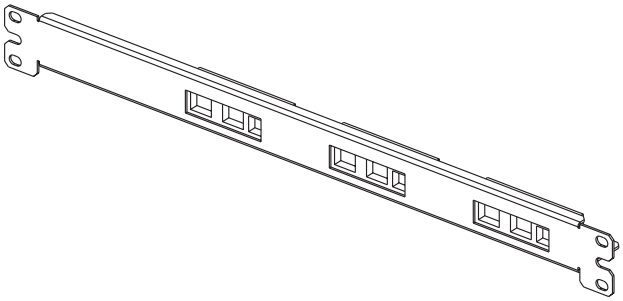


CAUTION: *Before you connect to the remote power injector, verify that the wired network connector is inserted into the NETWORK jack, and the AP connector is inserted into the ROAMABOUT AP jack.*

6. **Proceed to Chapter 3, Installing the Access Point.**

Rack Mount Kit Installation

The rack mount kit allows you to install up to three remote power injectors into one standard rack-mount panel to provide for the operation of up to three APs. The information presented in the **Remote Power Injector Installation on page 2-3** applies to each of the three remote power injectors in the rack mount kit.



Use the following procedure to install the rack mount kit.

1. If available, use a cable tester to check the cable wiring to each AP. Check continuity and pairing.
2. Select a mounting location:
   - — Close to the Ethernet wiring panel.
   - — Within six feet of an AC power outlet (if remote power is used).
3. Install up to three remote power injectors within the rack mount panel.

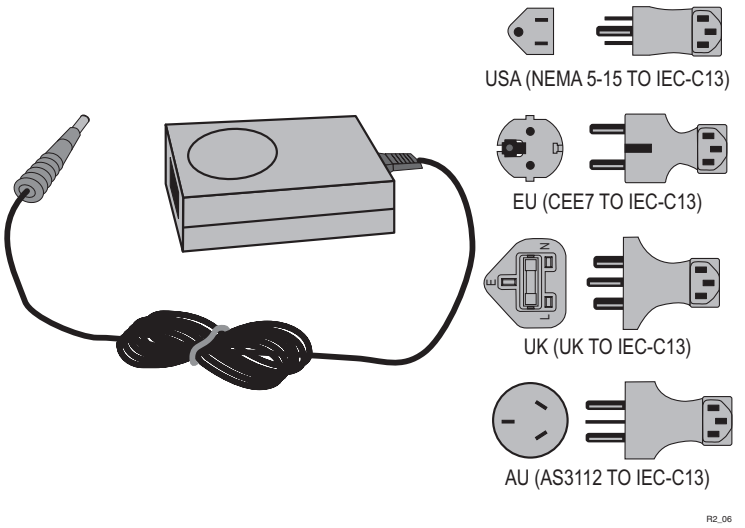
   Use the screws provided in the rack mount kit to secure each remote power injector to the rack mount panel.
4. Secure the rack mount panel to the rack using the screws provided in the kit.
5. Insert an Ethernet cable into the NETWORK jack of one of the remote power injectors.
6. Insert an AP cable into the ROAMABOUT AP jack of the same remote power injector.

   CAUTION: *Before you connect to the remote power injector, verify that the wired network connector is inserted into the NETWORK jack, and the AP connector is inserted into the ROAMABOUT AP jack*
7. Repeat Steps 5 and 6 for each AP.
8. **Proceed to Chapter 3, Installing the Access Point**.

Power Module Installation

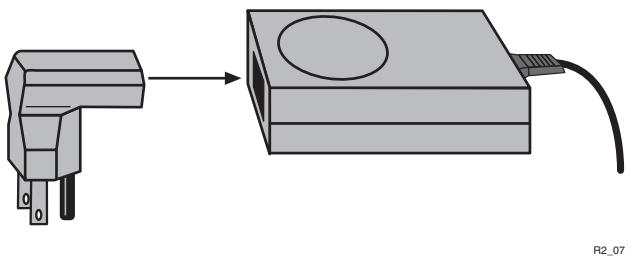
To install the 100-240VAC power supply, perform the following steps:

1. Verify that you have the correct power supply connector.



2. Insert the appropriate connector into the power supply.

CAUTION: Do not connect the power supply to the primary source until instructed to do so.



CAUTION: You must use a UL Listed Class 2 power supply. See Table 1-3 for the power supply specifications.

Selecting the Correct Ethernet Wiring Configuration

If you have an existing 10BaseT Ethernet cable in place, you can connect the cable directly to the Access Point. You can also connect the Ethernet cable to the remote power injector, then connect the remote power injector to the AP.

To ensure correct system operation, make sure you select the appropriate straight-through or crossover Ethernet wiring configuration for your installation.

Straight-Through Configuration

Use a straight-through wiring configuration if connecting:

- An Ethernet switching device to an AP.
- An AP to a remote power injector.

Crossover Configuration

Use a crossover wiring configuration if connecting:

- An AP to an AP.
- An AP to an Ethernet card in a PC.

Power and Connector Specifications

Access Point power and connector specifications are listed in the table below. These specifications are provided for customers who want to provide their own site operating power for the AP.

If the remote power feature is used, Enterasys strongly recommends that you test the cable from the remote power injector to the AP for continuity and correct pinout (straight-through cable) before power is applied. Enterasys assumes no responsibility if the specifications set forth below are not followed.

Specification	Rating
Power Consumption	5 Watts with 9 to 60 Volts DC 7 Watts with 10 Volts AC to 30 Volts AC
Voltage Input	9 to 60 Volts DC 555 mA @ 9 Volts DC to 83 mA @ 60 Volts DC Polarity Independent or 10 Volts AC to 30 Volts AC 500 mA @ 10 Volts AC to 167 mA @ 30 Volts AC
Regulation	Regulated or non-regulated UL Listed Class 2 power supplies may be used. Non-regulated power supply outputs should not exceed the stated maximum voltages and should not fall below the stated minimum voltages.
Redundant Power Application	Redundant power may be applied to the AP. Both power connections (front panel and Ethernet) are electrically isolated. Redundant power sources do not need to be matched for voltage or polarity. AC and DC sources may be used at the same time.
Power Connector	Coaxial Type Power Plug that mates with Switchcraft RAPC712 Jack (Switchcraft 760 or equivalent). Dimensions: Inside Diameter: 2.5 mm (0.100 inches) Outside Diameter: 5.5 mm (0.218 inches) Barrel Length: 9.5 mm (0.375 inches)

Chapter 3

Installing the Access Point

This chapter provides the procedures to install the Access Point 2000 and its options.

Make sure the site primary power for the AP conforms to the specifications detailed in **Chapter 2**.

If using a BootP/TFTP server and the AP Manager to configure the APs with IP addresses, you should configure the server BEFORE applying power to each AP. Upon power-up, each AP automatically sends a BootP request.

If you plan to use the AP Manager program, write down the MAC address listed on the front of the AP. For a LAN-to-LAN configuration, also write down the MAC address on the back of the PC Card, which is the wireless MAC address.

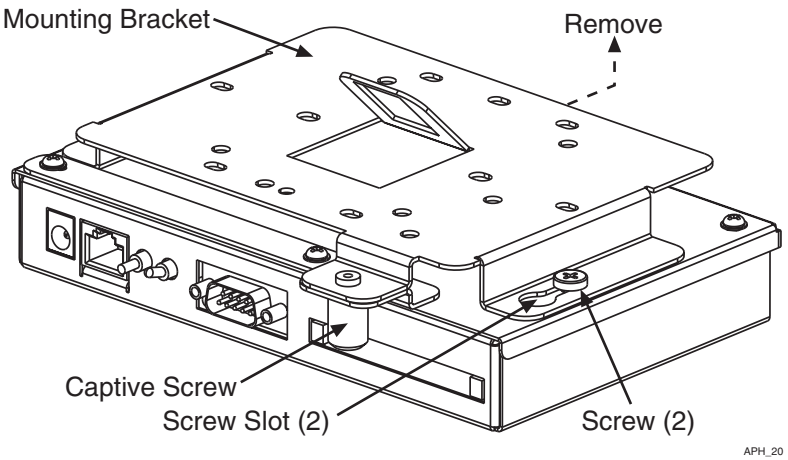
Wall/Ceiling Outlet Box Installation

Follow the step-by-step procedure below to install the Access Point to an outlet box.

1. Make sure the site primary power for the AP conforms to the specifications detailed in **Chapter 2** - **Cabling and Wiring**.
2. Select a wall or ceiling outlet:
   - If using remote power, with internal 10BaseT Ethernet network cabling installed.
   - If not using remote power, within five feet of an AC electrical outlet:
     - **a)** If using redundant power (connecting both local power and remote power).

       or

     - **b)** If using the local power option and not using the remote power option.
3. Remove the mounting bracket from the AP:
   - Completely loosen the captive screw.
   - Slide the bracket until the two screw slots are directly below the two screws.
   - Lift and remove the bracket from the AP.

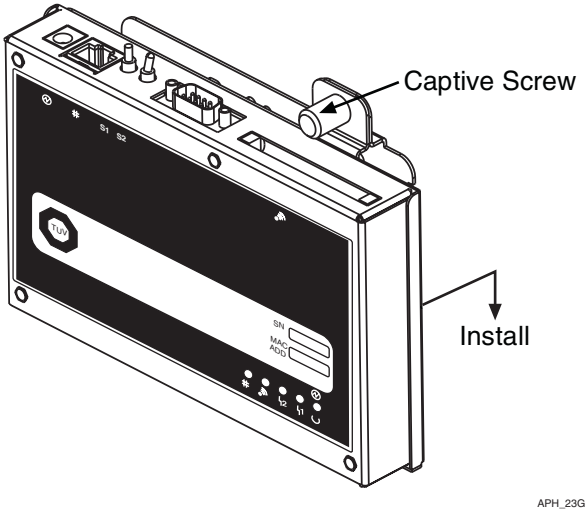


4. Connect the Ethernet cable.
5. Before installing the metal mounting bracket, make certain that the mounting holes on the bracket line up with those on the outlet box.

   Additional holes may be drilled in the bracket to accommodate your particular installation.

NOTE: *Remove all drilled material from the area.*

6. Secure the mounting bracket to the wall outlet box.
7. Secure the AP to the mounting bracket:
   - — Insert the two AP shoulder screws into the two mounting bracket screw slots.
   - — Slide the AP down.
   - — Tighten the captive screw to secure the AP.

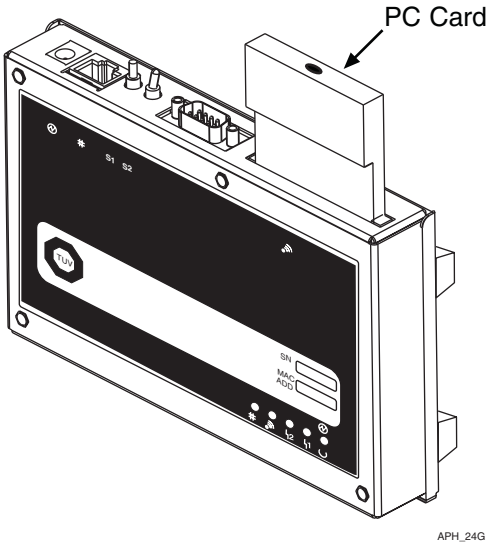


8. Install the PC Card:

— Position the card as shown below.

— Carefully insert the card.

— Press down firmly to seat the card.

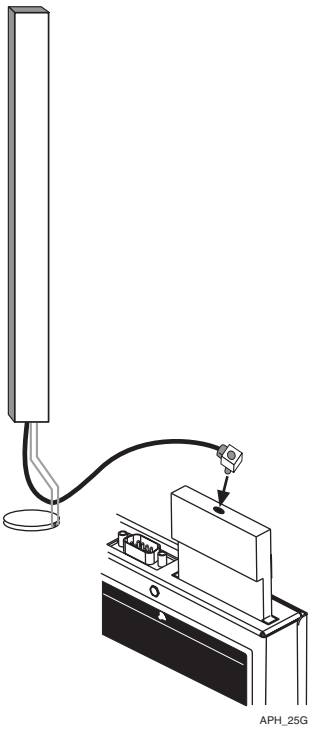


9. If you install the optional range extender antenna or outdoor antenna:

— Remove the dust cover.

— Insert the antenna plug into the PC Card connector.

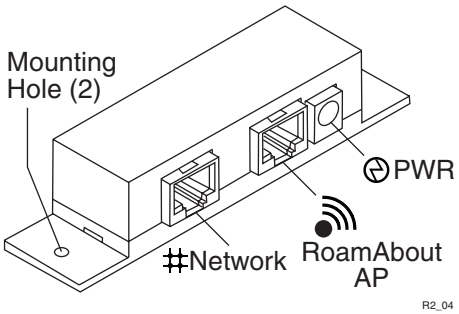
— Gently press down on the plug to secure the antenna connection.



10. Install the remote power injector or the rack mount kit, if used.

Refer to **Remote Power Injector Installation on page 2-3** or **Rack Mount Kit Installation on page 2-5**.

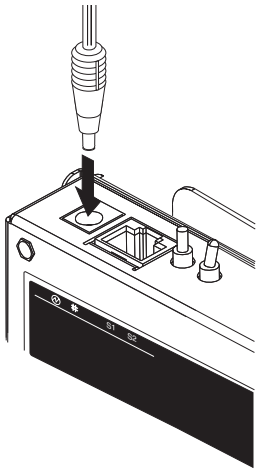
If you are using remote power, connect the output of the remote power module to the PWR jack on the remote power injector.



11. Install the power module/redundant power module, if used.

Refer to **Power Module Installation on page 2-6**.

Connect the output of the power module/redundant power module to the AP.



APH_27

12. Connect the power module into an AC outlet.

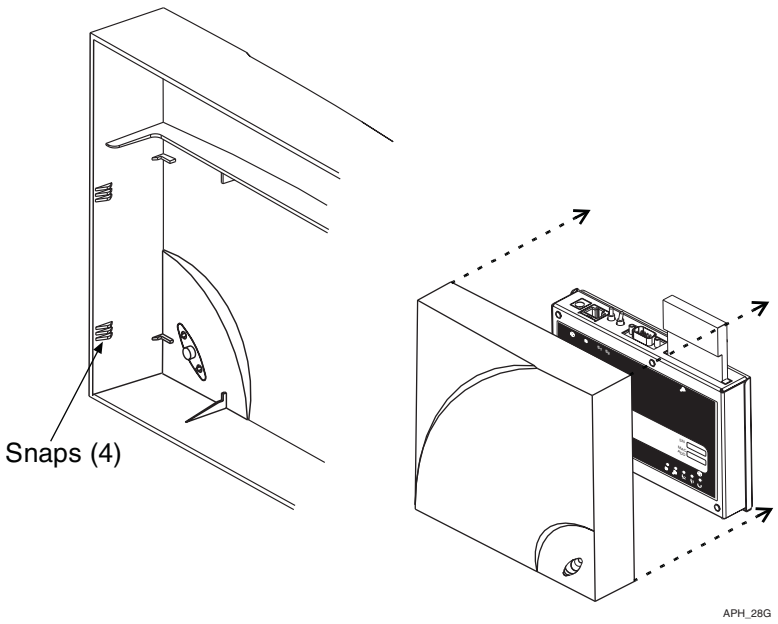
13. Verify power on by observing that some of the AP LEDs are flashing or lit.

14. Secure the cover:

— Position the cover over the AP.

— Make sure the cover clears the antenna plug.

— Push the cover down until all four snaps are secured.



APH_28G

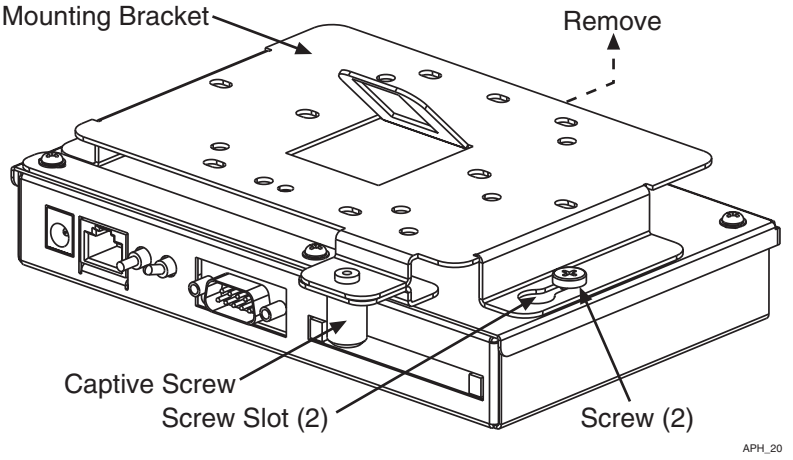
Surface Wallmount Installation

Follow the step-by-step procedure below to install the AP on the surface of a wall, cubical wall, vertical support structure, or ceiling.

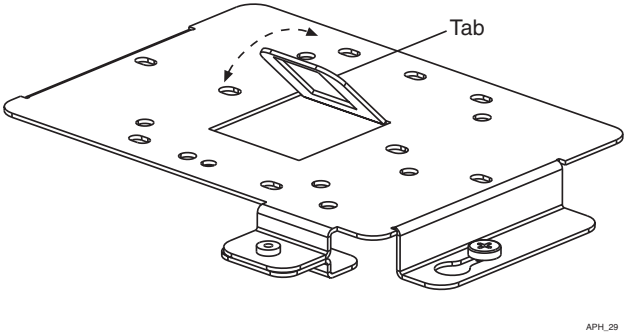
1. Make sure the site primary power for the AP conforms to the specifications detailed in **Chapter 2 - Cabling and Wiring**.
2. Select the optimum mounting location:
   - With easy access for inspection and service.
   - If using remote power, close to the 10BaseT Ethernet network cable connector.
   - If not using remote power, within five feet of an AC electrical outlet:
     - **a)** If using redundant power (connecting both local power and remote power).

       or

     - **b)** If using the local power option and not using the remote power option.
3. Remove the mounting bracket from the AP:
   - Completely loosen the captive screw.
   - Slide the bracket until the two screw slots are directly below the two mounting screws.
   - Lift and remove the bracket from the AP.



4. Flatten the metal mounting bracket tab against the bracket, or remove the tab by bending it back and forth.



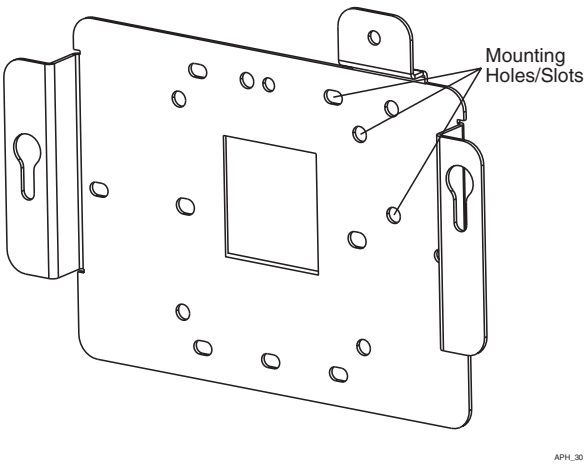
5. Secure the mounting bracket to the wall:

— Locate at least two mounting holes/slots on the mounting bracket that line up with a wall stud.

— Use two screws to secure the mounting bracket to the wall stud.

— Use plastic anchors and screws, or self-anchoring screws to secure the mounting bracket to the wallboard.

NOTE: *Additional holes may be drilled in the bracket to accommodate your particular installation. Remove all drilled material from the area.*

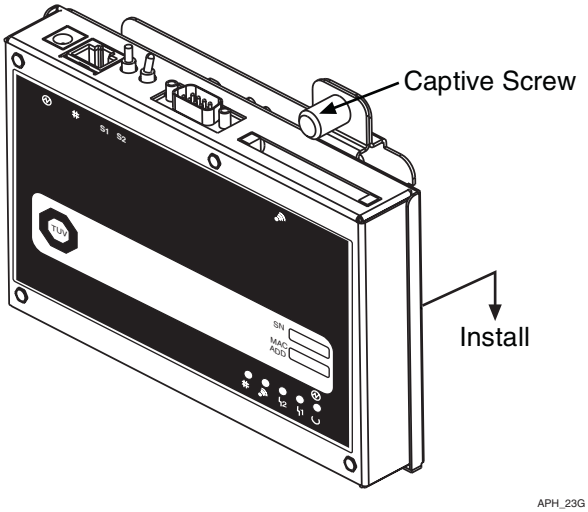


6. Secure the AP to the mounting bracket:

— Insert the two AP shoulder screws into the two mounting bracket screw slots.

— Slide the AP down.

— Tighten the captive screw to secure the AP.

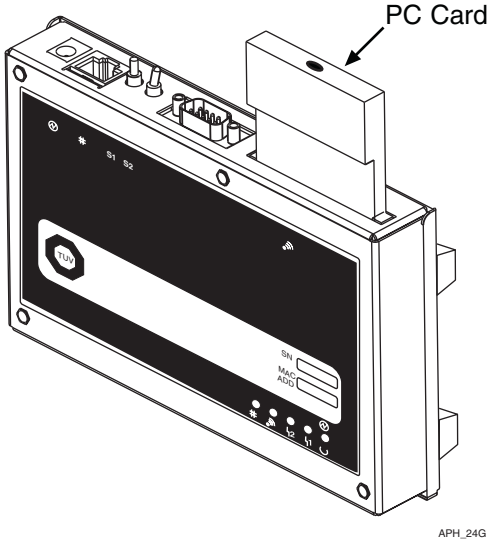


7. Install the PC Card:

— Position the card as shown below.

— Carefully insert the card.

— Press down firmly to seat the card.

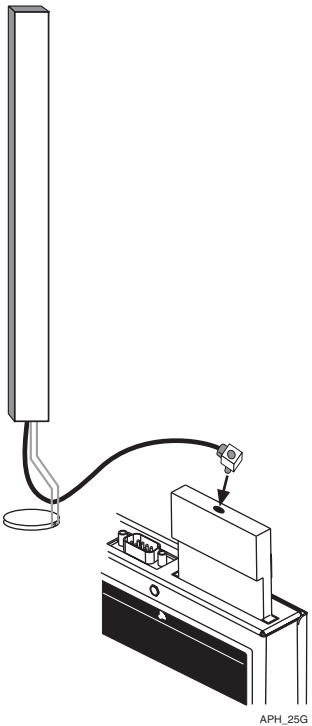


8. If you install the optional range extender antenna or outdoor antenna:

— Remove the dust cover.

— Insert the antenna plug into the PC Card connector.

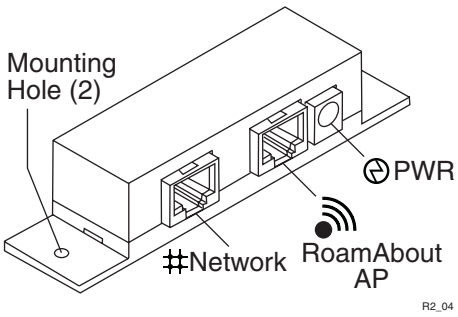
— Gently press down on the plug to secure the antenna connection.



9. Install the remote power injector or the rack mount kit, if used.

Refer to **Remote Power Injector Installation on page 2-3** or the **Rack Mount Kit Installation on page 2-5**.

Connect the output of the remote power module to the PWR jack on the remote power injector.



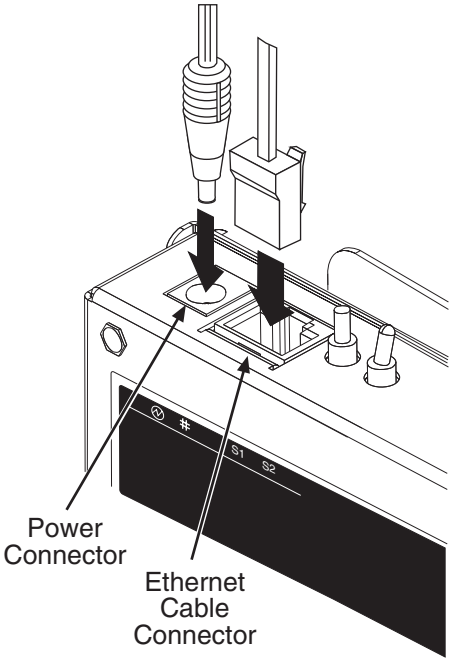
10. Connect the 10BaseT Ethernet network cable.

If you are using the remote power feature, label the end of the cable to the AP with: **CAUTION: Ethernet cable contains power. Do not use for other devices**.

If you are not using remote power, install the power module/redundant power module, if used; refer to **Power Module Installation on page 2-6**.

11. Connect the power module into an AC outlet.

12. Verify power on by observing that some of the AP LEDs are flashing or lit.

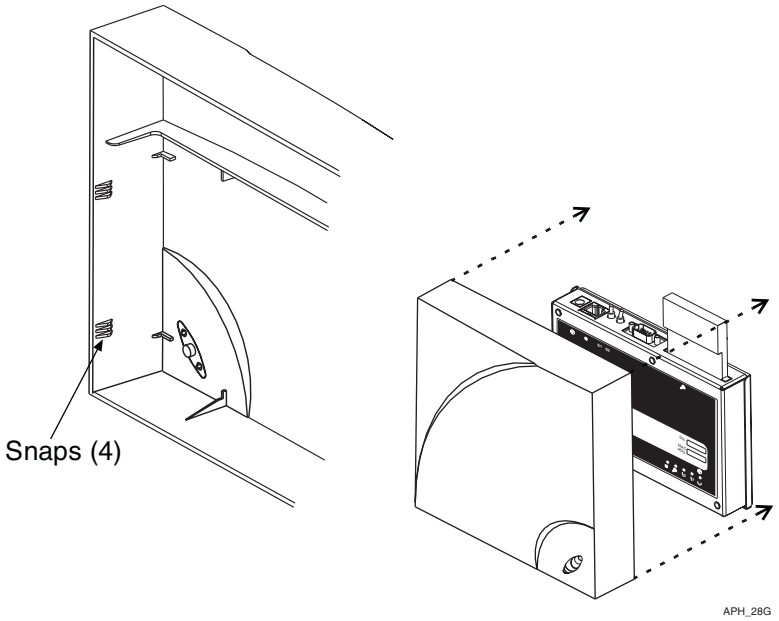


13. Secure the cover:

— Position the cover over the AP.

— Make sure the cover clears the antenna plug.

— Push the cover down until all four snaps are secured.



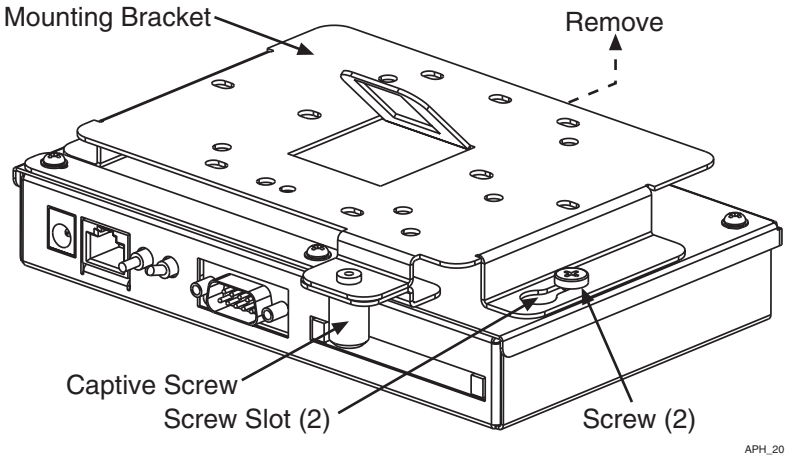
Desktop Installation

To install the Access Point on a desktop, do the following:

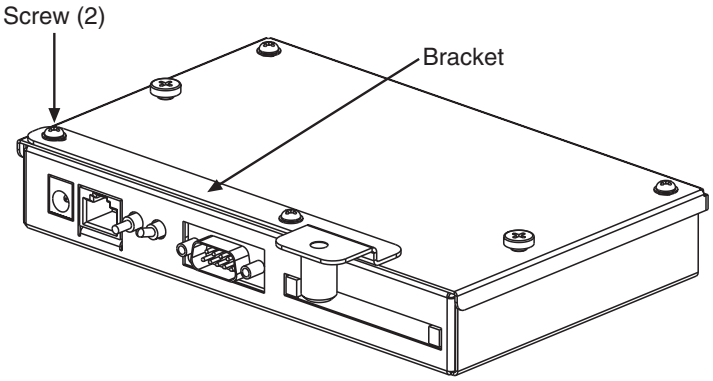
1. Make sure the site primary power for the AP conforms to the specifications detailed in **Chapter 2** - **Cabling and Wiring**.
2. Select a desktop location:
   - — If using remote power, close to the 10BaseT Ethernet network cable connector.
   - — If not using remote power, within five feet of an AC electrical outlet:
     - **a)** If using redundant power (connecting both local power and remote power).

       or

     - **b)** If using the local power option and not using the remote power option.
3. Remove the mounting bracket from the AP:
   - — Completely loosen the captive screw.
   - — Slide the bracket until the two screw slots are directly below the two shoulder mounting screws.
   - — Lift and remove the bracket from the AP.



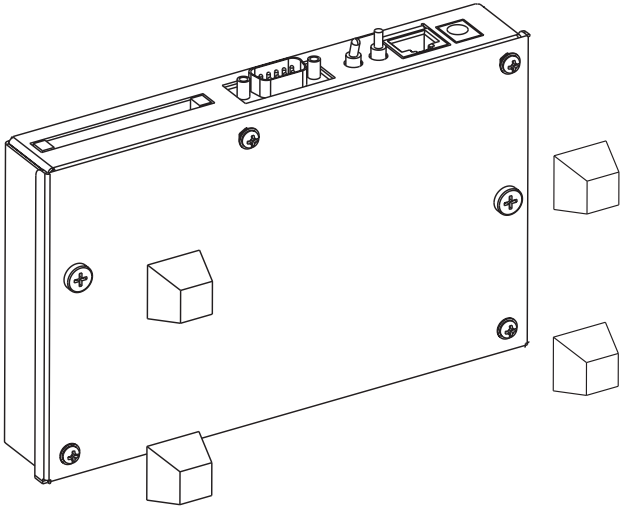
4. Remove the captive screw bracket by removing two screws.



5. Re-install the two screws.

6. Install the four rubber feet on the bottom of the AP.

NOTE: *Exact placement of each rubber foot is not crucial. For maximum stability, install each rubber foot as close to a corner of the AP as possible.*

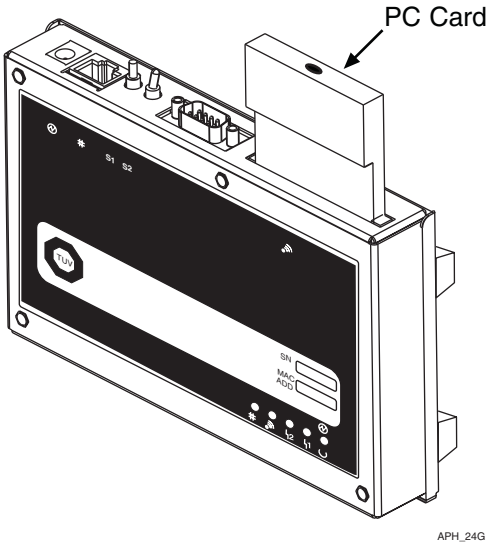


7. Install the PC Card:

— Position the card as shown below.

— Carefully insert the card.

— Press down firmly to seat the card.

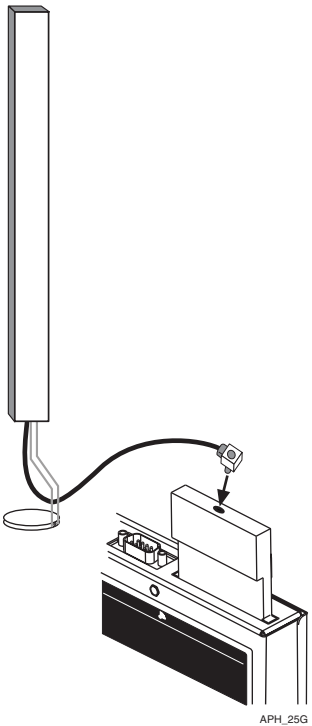


8. If you install the optional range extender antenna or outdoor antenna:

— Remove the dust cover.

— Insert the antenna plug into the PC Card connector.

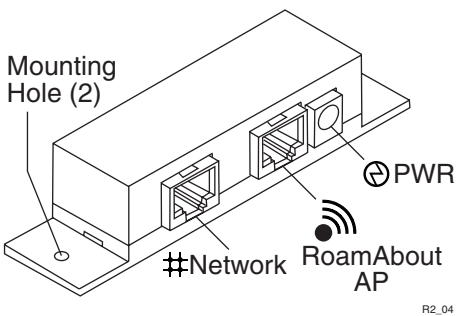
— Gently press down on the plug to secure the antenna connection.



9. Install the remote power injector or the rack mount kit, if used.

Refer to **Remote Power Injector Installation on page 2-3** or the **Rack Mount Kit Installation on page 2-5**.

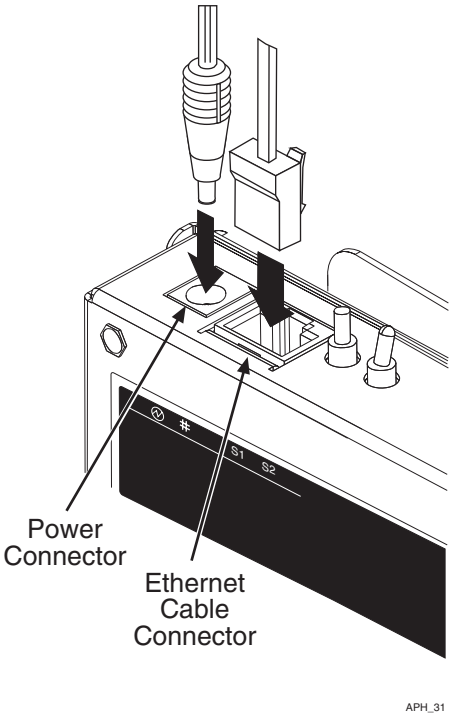
Connect the output of the remote power module to the PWR jack on the remote power injector.



10. Connect the 10BaseT Ethernet network cable.

If you are using the remote power feature, label the end of the cable to the AP with: **CAUTION: Ethernet cable contains power. Do not use for other devices**.

If you are not using remote power, install the power module/redundant power module, if used; refer to **Power Module Installation on page 2-6**.



11. Connect the power module into an AC outlet.

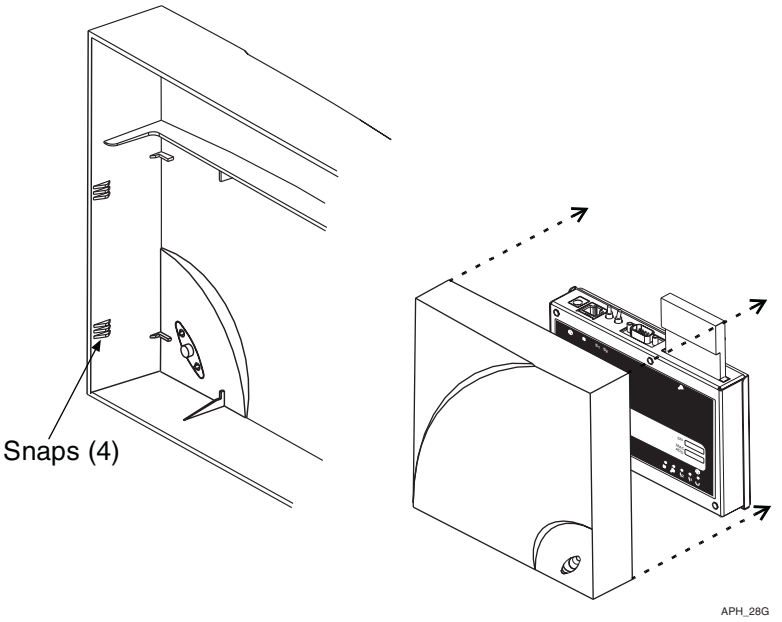
12. Verify power on by observing that some of the AP LEDs are flashing or lit.

13. Secure the cover:

— Position the cover over the AP.

— Make sure the cover clears the antenna plug.

— Push the cover down until all four snaps are secured.



Connecting a Device to the Console Port

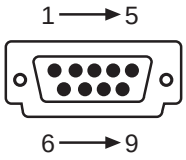
You can manage the Access Point using its console port or using the RoamAbout AP Manager program. You do not need to use the console port if you use the AP Manager. These management tools are described in the *RoamAbout 802.11 Wireless Networking Guide*.

You can connect a terminal or personal computer running terminal emulation software to the console port. Signals from the console port conform to the EIA-232D signaling standard at 9600 baud only. The port appears as a data terminal equipment (DTE) device. To connect a device to the AP console port, do the following:

1. Choose a device (terminal or personal computer) to connect to the AP.

2. Connect a null modem cable or equivalent to the device and the AP:

Pin	Assignment
1	Data Carrier Detect (DCD)
2	Receive Data (RXD)
3	Transmit Data (TXD)
4	Data Terminal Ready (DTR)
5	Ground
6	Data Set Ready (DSR)
7	Request to Send (RTS)
8	Clear to Send (CTS)
9	No connect



3. If using a terminal, configure the transmit and receive baud rates to 9600 baud only.

4. If using a personal computer, configure a terminal emulation application to use 9600 baud transmit and receive rates. The following is an example of configuring the Microsoft Windows Hyperterminal application:

a) Open the Hyperterminal application, which is usually located in **Programs→Accessories→Hyperterminal**.

b) Create a new connection. Depending on the system configuration, Hyperterminal could automatically prompt you for a new connection name. Choose a name that identifies the connection type, such as AP Console Port.

c) Ignore or cancel any prompts for modem or phone information.

d) In a **Connect Using** or similar field, select the port that is connected to the AP, such as COM1.

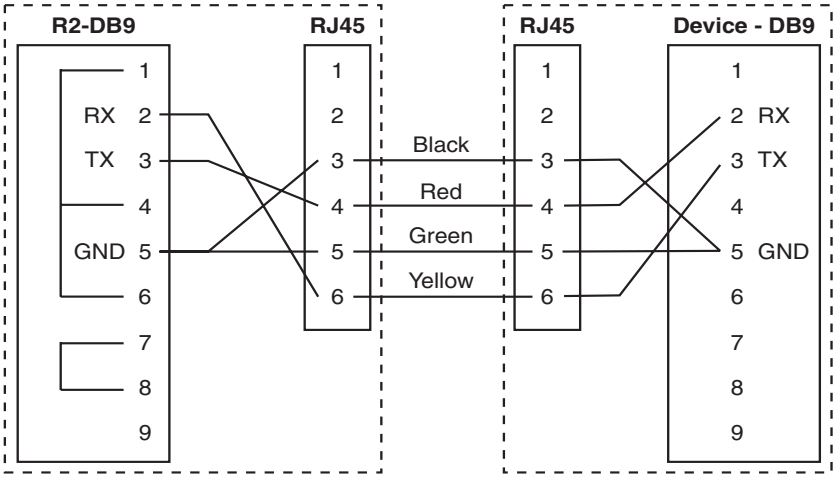
e) In the Port Settings window, enter:

- **Bits per second**: 9600
- **Data bits**: 8
- **Parity**: None
- **Stop Bits**: 1
- **Flow Control**: Hardware

To connect to the console port at a later date, open Hyperterminal and select **File→Open** to open the AP Console Port connection.

5. Press <**Enter**> a few times until the RoamAbout Access Point Installation Menu is displayed. The installation menu allows you to display and modify various AP and wireless networking parameters.

The AP console port requires that the cable is connected to another device; otherwise, spurious noise could cause the console port to be unresponsive especially when the AP is reset. If you plan to connect a cable to the console port but not always have that cable connected to a device (such as connecting the console cable to a patch panel), you need to attach the TX and RX pins to ground, as shown in the cabling diagram below. A patch panel would be between the two RJ45 connectors.



Verifying the Operation of the Access Point

The Access Point runs a series of self-tests on power-up and reports status using its LEDs (shown below). The diagnostics take several seconds to complete after power-up. **Table 3-1** describes the LEDs. If the AP LEDs indicate an error, verify that you have correctly installed the AP. **Table 3-2** describes the patterns, the most likely causes, and possible corrective actions. If the AP still fails, refer to the *RoamAbout 802.11 Wireless Networking Guide*.

The Reload/Reset button, shown below, is used to download a new firmware image to the AP, and to reset the AP to the factory defaults. The toggle switch is reserved for future use. You need to write down the MAC address (in the **MAC ADD** box) for use when configuring the AP.

Once the AP is installed and powered on, refer to the *RoamAbout 802.11 Wireless Networking Guide* to set the AP parameters.

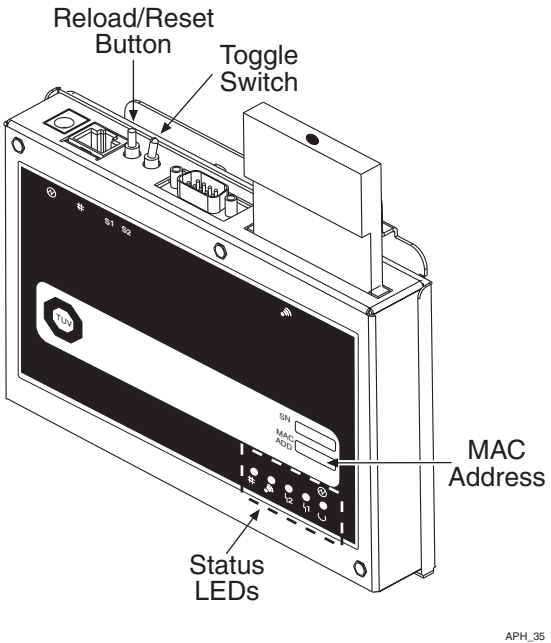


Table 3-1: Access Point LED Summary Table

Name	Description
Power/System OK 	Lights when the AP has power and has passed the self-test. If the AP fails the test, the LED blinks at a steady rate.
Bridge State 	Lights when the AP is forwarding packets.
Access Point Saturated 	Lights when the AP is saturated. Saturation occurs when the AP cannot forward packets from the Ethernet to the wireless side due to the lower throughput of the wireless network. The degree of LED brightness indicates the level of saturation. The LED dims (and eventually extinguishes) as the network congestion is processed.
Wireless LAN Activity 	Lights when packets are: • Received on the wireless port and forwarded to the Ethernet port. • Received on the Ethernet port and forwarded to the wireless port. • Addressed to or generated by the AP using the wireless port. Packets received and filtered are not shown. The average brightness of the LED indicates the level of activity on the wireless port. If the LED blinks in unison with the **Power/System OK** and the **Bridge State** LEDs, the wireless port has a fault that prevents the AP from establishing a connection to the network.
Wired LAN Activity 	Lights when data is received on the Ethernet port. Data transmitted by the AP is not shown. Data traffic forwarded to the Ethernet port from the wireless port is not shown.

Table 3-2: Access Point LED Patterns

Wired LAN	Wireless LAN	Access Point Saturated	Bridge State	Power/ System OK	Meaning of LED Pattern
○	○	○	○	○	No power. Check the power connections.
○	●	●	○	●	Diagnostics failed. The AP automatically resets after one minute. If the pattern continues to display, contact technical support.
⊕	⊕	○	●	●	Normal operating mode.
⊕	⊕	○	○	●	AP is waiting for the spanning tree. No action is required. Or, Spanning Tree detected a bridge loop and disconnected the port. Remove the loop.
⊕	⊕	⊕	●	●	AP is occasionally saturated. No action is required.
⊕	●	○	●	●	Cannot communicate with the wireless network. Verify that the PC Card is properly inserted.
○	⊕	●	●	●	Cannot communicate with the wired network. Verify that the Ethernet cable is properly connected.
⊕	●	●	●	●	Cannot communicate with the wireless or wired network.

● = On ○ = Off ● = Constant blinking ⊕ = Random blinking

Configuring the Access Point

If creating a new wireless network, refer to the *RoamAbout 802.11 Wireless Networking Guide* for the complete configuration procedures. If adding this Access Point to an existing wireless infrastructure network, the following sections provide the basic procedure to configure the AP. Refer to the *RoamAbout 802.11 Wireless Networking Guide* for details.

Using the RoamAbout AP Manager

1. At the computer with AP Manager installed, start the AP Manager by clicking the **Start** button on the Windows desktop and selecting **Programs→RoamAbout→RoamAbout AP Manager**.
2. Determine if the new AP belongs to an existing group. Refer to the *RoamAbout 802.11 Wireless Networking Guide* for a description of configuration groups.

   File→Open (adds the AP to an existing group)

   File→New (starts a new group)
3. Click on the **Setup/Add New Access Point** button to setup/add an AP.
4. When prompted, click **Yes** to provide an IP address.
5. Enter the AP's wired MAC address (printed on the front of the AP under the plastic cover).
6. Assign the AP a valid IP address for your network.
7. Enter the AP SNMP read/write community name, which is by default **public**.
8. If necessary, change the default gateway and subnet mask. Click on **OK** when done.
9. In the Identification dialog box, enter the text to describe the AP. Click on the **Help** button for details. Click on **OK** when done.
10. In the Wireless Parameters dialog box, enter the name of the wireless network.
11. Enter a channel. If there are other APs whose coverage areas overlap, enter a channel that is at least five channels apart from the APs.
12. Enter a station name. The station name is displayed when clients run the RoamAbout Client Utility. Each AP should have a unique station name.
13. Enter other wireless parameters as appropriate for the wireless network.
14. To implement your changes, click on **Reset** from the main window then select **Reset with Current Settings**. Allow approximately one minute for the AP to reset and complete its self-test.

Using the RoamAbout AP Console Port

1. Press the <**Return**> key at the terminal that is connected to the console port until the RoamAbout Access Point Installation Menu appears. If using a computer, start the terminal emulation program and connect to the console port.
2. To allow the AP Manager or other management tools using SNMP to remotely manage the AP, perform the following:
   a) Choose **Set IP Address** from the Installation Menu.
   b) Enter the IP address, subnet mask, and default gateway.
3. Choose **Module-Specific Options** from the Installation Menu, then choose **Set Wireless Configuration**.
4. Enter the name of the wireless network.
5. Enter a channel. If there are other APs whose coverage areas overlap, enter a channel that is at least five channels apart from the adjacent APs, if possible.
6. Enter a station name. This name is displayed when clients run the RoamAbout Client Utility. Each AP should have a unique station name.
7. To implement your changes, reset the AP by choosing **Reset with Current Settings** from the Installation Menu. Allow approximately one minute for the AP to reset and complete its self-test.

Appendix A

Upgrade and Reset

This appendix describes how to upgrade the RoamAbout Access Point 2000 firmware using the console port or AP Manager. It also describes how to reset the R2 to all factory defaults.

Check the Enterasys Networks Wireless web site for the latest RoamAbout AP Manager and firmware. Go to www.enterasys.com/wireless and click on the **Software Download Library** to download the latest AP Manager and RoamAbout Access Point 2000 firmware. The AP Manager contains the firmware and BootROM image files. Refer to the AP Manager release notes for the instructions to install the AP Manager.

CAUTION: *If the power is interrupted during the upgrade or reset back to factory defaults process, the image in your device will become corrupt. Do not turn off or perform any action that can cause power loss during an upgrade.*

Upgrade Firmware

Using the Console Port

Follow this procedure to upgrade the Access Point 2000 from the console port. Do not choose the Save command when using the Upgrade Flash command.

1. Choose **Module-Specific Options** from the Access Point Installation Menu.
2. Choose **Upgrade Flash** from the next menu.
3. Choose **BootP Server** if a BootP server has been configured with the correct file. Choose **TFTP Server** if you wish to upgrade the AP with a specific image. If choosing **TFTP Server**, you will be prompted for the server IP address and image file name.
4. If using TFTP, enter the latest **N*.BIN** file for firmware upgrades, or **R*.BIN** file for BootROM upgrades in the Image file path. Enter the TFTP Server IP address of the system running NetRider Loader, or your TFTP server's IP address.
5. Follow the online instructions to complete the upgrade.

Using the RoamAbout AP Manager

1. Select the RoamAbout Access Point 2000 that you want to upgrade from the RoamAbout AP Manager Managed List.
2. Click on the **Reload** button in the Main window.
3. Select one of the following:

   — **Use this Computer**

   The firmware image is on the same computer and in the same directory as the AP Manager, which uses the NetRider Loader application to load the image. You need to specify the image file name in the **Firmware Image File** field. You can use the **Browse** button to search for the file name.

   — **Use Remote BootP server**

   If you have one or more BootP servers configured on the same subnet as the AP, use this option to have the AP send a BootP request. The first BootP server to respond is the one that loads the AP. A BootP server is configured to use a specific file; therefore, you do not need to specify a file name here.

   — **Use Remote TFTP Server** and enter the IP address of your TFTP server

   The AP only loads the image from the TFTP server whose IP address is specified in the **TFTP Server Address** field. You need to specify the image file name in the **Firmware Image File** field. You should use this option when you are managing APs on a different subnet than the computer with the AP Manager.

4. If the remote BootP option was not selected, use the **Browse** button next to the **File** field to locate the latest **N*.BIN** file for firmware upgrades or **R*.BIN** file for BootROM upgrades.

5. Click on the **Reload Now** button. NetRider Loader starts (if you did not specify to use your TFTP server).

6. Click **Yes** to confirm the upgrade, then click **OK** to reconfirm the upgrade.

7. AP Manager displays a Poll dialog box that prompts you to poll the AP. Polling lets you know when the upgrade is complete.

CAUTION: *Use the Poll dialog box to determine when the upgrade is complete. The NetRider Loader application only indicates when the file copy is completed, it does not indicate when the upgrade is complete.*

8. Click **Yes** in the Poll dialog box to start the poll. You will receive a "Reload Status = Success" message when the upgrade is complete. The upgrade takes approximately one minute. AP Manager prompts you to reset the AP after the upgrade is complete.

9. Click **Yes** to reset the unit.

Hardware Reset to Factory Defaults

The RoamAbout Access Point 2000 hardware reset button (labeled S1 on the unit) forces the AP to download a firmware image and reset to factory default values. Use the reset button when you are unable to reload or upgrade the AP using the AP Manager or console port (i.e., should the AP firmware suffer data corruption).

Note the following before you reset the AP to factory defaults:

- The firmware image must be in the same directory where the Loader.exe file is located. If you have AP Manager installed, the firmware file is located in the Program Files/ RoamAbout/Manager directory.
- Record the N*.BIN firmware file name and the MAC address (in the **MAC ADD** box on the unit) for use when configuring the AP.

To use the reset button, perform the following:

1. Access the Login screen using the console port management via a HyperTerminal session or DOS prompt. This will allow you to view the reset, and to determine when the reset is complete.
2. Start NetRider Loader. Click on the Loader.exe file.
3. Click on the **Setup** button.
4. Enter the following information:
   a) Host name.
   b) Hardware address. This is the AP MAC address that you recorded.
   c) IP address. The IP address you want to assign to the AP.
   d) Subnet Mask.
   e) Gateway IP address (optional).
   f) Image. The name of the firmware file that you recorded.
5. Click on **OK**.
6. Power off the AP.

7. Reapply power then press the reset button (S1) on the AP. If an image is not available, the AP waits approximately three minutes then resets to factory default values.

   NetRider Loader indicates a loading status.

   CAUTION: *The NetRider Loader application only indicates when the file copy is completed, it does not indicate when the upgrade is complete.*

8. Click on **Close** to exit NetRider Loader when the loading is complete.

9. View the console screen. You will see activity on the console screen as the unit resets. When the reset is complete, the Login screen displays again.